

## ABSTRACT OF THE INVENTION

Electrically (and, possibly, mechanically) active patterns are applied using a colloidal suspension of nanoparticles that exhibit a desired electrical characteristic. The nanoparticles are surrounded by an insulative shells that may be removed by therefrom  
5 by application of energy (e.g., in the form of electromagnetic radiation or heat). The nanoparticle suspension is applied to a surface, forming a layer that is substantially insulative owing to the nanoparticle shells. The applied suspension is exposed to energy to remove the capping groups and fuse the particles into cohesion. If the nanoparticle suspension was deposited as a uniform film, the energy is applied in a  
10 desired pattern so that unexposed areas remain insulative while exposed areas exhibit the electrical behavior associated with the nanoparticles. If the nanoparticle suspension was deposited in a desired pattern, it may be uniformly exposed to energy. Additional layers may be applied in the same manner, one over the other, to form a multilayer device.

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